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Award Number: W81XWH-08-2-0204

TITLE: PTSD Trajectory, Comorbidity, and Utilization of Mental Health Services Among Reserves

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REPORT DATE: November 2011

TYPE OF REPORT: Revised Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release; distribution unlimited

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
01-11-2011	Revised Annual	15 SEP 2010 - 14 OCT 2011

4. TITLE AND SUBTITLE
PTSD Trajectory, Comorbidity, and Utilization of Mental Health Services Among Reserves

5a. CONTRACT NUMBER

5b. GRANT NUMBER
W81XWH-08-2-0204

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
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5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Columbia University
New York, NY 10032

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

This research will assess mental health and mental health service utilization over time among a representative sample of Reserve forces, within a multivariate causal framework taking into account life course experiences together with combat history, other military experience and civilian traumatic event experiences as determinants of mental health. We focus on the prevalence and correlates of PTSD and other mental illness and health service utilization, but also on the trajectories of PTSD and co-occurring psychopathology over time. The scope includes developing, piloting and implementing a structured survey for a random sample of Reserve members. Findings from analyses of all three waves of the survey will be disseminated to key stakeholders. To date, we have constructed a survey for initial data collection as well as subsequent waves that contains modules on (1) risk or protective factors for psychological morbidity over the life course (general traumas, psychological resources, life and family concerns), (2) mental health (depression, PTSD, emotional health history), (3) service utilization patterns (use of mental health resources). We have completed baseline enrollment and data collection on 1000 Reserves. We are currently completing the first follow-up. In addition, we are currently planning the second wave of follow-ip surveys and have initiated analysis of the data from the baseline survey.

15. SUBJECT TERMS
Survey construction, random selection, survey pilot

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			USAMRMC
U	U	U	UU	11	19b. TELEPHONE NUMBER *(include area code)*

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INTRODUCTION

This work will assess mental health and mental health service utilization over time among a representative sample of the Reserve forces, within a multivariate causal framework that takes into account life course experiences and circumstances together with combat history, other military experience (e.g. humanitarian activity and activation for state missions) and civilian traumatic event experiences as determinants of mental health in this group. We focus here not only on documenting the prevalence and correlates of PTSD and other mental illness and health service utilization among these forces, but also on documenting the *trajectories* of PTSD and co-occurring psychopathology over time among these forces. Although there is a growing literature about the mental health and mental health needs of active duty military personnel, this would be the first study, as best we know, that has focused explicitly on the experience of the Reserve forces. For the reasons mentioned above, this group needs to be identified as a separate study population so that the special issues associated with their service can be examined. This study has implications for early intervention after exposure to traumatic events (including combat experiences and domestic deployment), training of the RC, and education of commanding officers and military leadership.

BODY

STATEMENT OF WORK

Task 1. To develop a structured survey instrument that will assess (a) factors throughout the lifecourse that may be risk or protective factors for psychological morbidity among Reserve force members, (b) mental health, and (c) service utilization patterns among Reserve force members.

Milestone: The final version of the survey instrument has been developed and contains: (a) risk or protective factors for psychological morbidity over the life course (e.g. modules on general traumas, psychological resources, life and family concerns), (b) mental health (e.g. modules on depression, PTSD, emotional health history) (c) service utilization patterns among reserve force members (e.g. use of mental health resources). Please see Appendix 1 for a copy of the survey.

Task 2. To obtain final IRB approval from relevant local institutions (CU and USUHS) and Department of Defense.

Milestone: Final IRB approval was approved for the baseline survey from the original three institutions (UM, USUHS and DOD).

Task 3. To pilot test the instrument with a random sample of Reserve forces and modify the instrument as necessary to adequately reflect Reserve force experiences.

Milestone: The survey instrument has been piloted with a random sample of the Reserve forces and the instrument has been modified as necessary to adequately reflect Reserve force experience and shortened to reduce participant burden, and approved by DoD.

Task 4. To implement the survey among a randomly selected sample of 1,000 Reserve force members using a combination of telephone and web-based techniques.

Milestone: Participant population selected and baseline survey, N=1000 interviews completed.

Task 5. To analyze survey data and to produce reports that are accessible to military, civilian, and scientific audiences and to prepare first follow-up survey wave.

Milestone: We are currently preparing manuscripts for publications.

Task 6. To implement the first survey follow-up, re-contacting all persons in the original sample and administering the follow-up survey using telephone and web-based methods.

Milestone: Continuing IRB approval has been obtained from the current institutions (CU and USUHS and Department of Defense). See Appendix 2 for a copy of the first follow-up survey.

Task 7. To analyze wave 2 survey data and to produce reports that are accessible to military, civilian, and scientific audiences and to prepare second follow-up survey wave.

Milestone: In conjunction with wave 1 analyses, wave 2 data will be analyzed and cleaned as soon as completed.

Task 8. To implement the second survey follow-up, recontacting all persons in the original

sample and administering the follow-up survey using telephone and web-based methods.

Milestone: The second follow-up survey is currently being developed and approved by all IRBs. We are also currently getting the second follow-up survey approved by the necessary IRBS (see Appendix 3). In addition, we have obtained a Extension Without Funds (EWOF) which will allow us to continue our project until the end of 2012.

PRELIMINARY ANALYSES

PARTICIPANT CHARACTERISTICS

Baseline Sample. The enrollment of the baseline cohort began in January 2010 and was completed as of August 2010. In the baseline sample the majority of participants were male (76.9%) and white (71.4%). The modal age was between 25-34 (31.2%) and only 18.1% of participants were over the age of 45. 41.4% of the soldiers had some college or technical training and 54.2% were married at the time of the survey. With respect to the participants' military characteristics, 28.4% were officers/warrant officers, 17.1% were in the Air Force reserve, 49.3% were in the Army Reserve, 16.3% were in the Marine Corps Reserve and 17.3% were in the Navy Reserve. The majority of soldiers have had some deployment experience (72.2%), with 27.6% experiencing between 1 and 3 deployments. With respect to traumatic event experiences, 92.2% of the soldiers experienced at least 1 traumatic event in their civilian life with the modal amount being between 1 and 5 (52.9%). With respect to their most recent deployment, 66.1% experienced a traumatic event while deployed with the modal value between 5 and 8 traumatic events (34.6%).

***Longitudinal sample*.** Enrollment of the wave 2 cohort began in January of 2011 and is expected to end as of November 2011. 61.4% of wave 1 participants have returned as of September, although we project capturing approximately 65% of the baseline sample when we close wave 2 data collection. The majority of wave 2 participants were male (76.6%) and white (72.8%). The modal age was between 25-34 (33.3%) and only 23.0% of participants were over the age of 45. 38.7% had some college or technical training and 57.6% were married at the time of survey. With respect to military characteristics, 31.37% were officers/warrant officers, 18.7% were in the Air Force reserve, 46.6% were in the Army Reserve, 15.8% were in the Marine Corps Reserve and 19% were in the Navy Reserve. The majority had some deployment experience (75.7%), and 30.9% experienced between 2 and 3 deployments.

BASELINE SAMPLE ANALYSES

***Prevalence Of Posttraumatic Stress Disorder And Depression By Branch Of Reserve Forces*.** Our first analysis will focus on the baseline prevalence of lifetime, past year and past month mental health conditions across the branches of the Reserve forces. Depression* was the most prevalent condition to occur in their lifetime, and occur within the past year as well as the past month (21.5%, 8.0% and 5.4% respectively). The prevalence of lifetime depression was significantly different across the branches, with those in the Marine Reserve having the highest prevalence (28.6%) followed by the Army Reserve (22.6%), and those in the Navy Reserves having the lowest prevalence (16.3%, p-value<0.05). There were no significant differences in past year or past month depression by branch. The prevalence of total PTSD* (PTSD that occurred either in their civilian or military lives) was 11.3% ever in their lifetime, 5.0% in the past year and 4.0% in the past month. The prevalence of PTSD developed during their most-recent deployment (6.9% lifetime) was higher than that which occurred during civilian status (5.6% lifetime). Comparing lifetime PTSD, including deployment and non-deployment PTSD, those in the Navy Reserves had the highest lifetime prevalence (14.0%) while those in the Air Reserves had the lowest (10.2%), although these differences were not statistically significant.

Implications: These findings provide evidence that the Reserves experience a level of mental health worth investigating further and suggests that specific branches within the Reserve could be targeted for more pointed interventions.

LONGITUDINAL SAMPLE ANALYSES

Traumatic Brain Injury. Building on recent interest in the field we have an active research focus on mild traumatic brain injury (MTBI*). MTBI is prevalent in 4% of deployed members of our longitudinal sample and more common in men (4.7%) than women (1.2%; $p<0.01$). The prevalence of MTBI at baseline was different across branches, with Marine Reserves having the highest prevalence (10.5%), and Air Force Reserves having the lowest (2.3%), although these differences were not statistically significant. MTBI at baseline was associated with a number of mental health conditions at wave 2, including PTSD – 16.7% compared to 2.7% in those without MTBI ($p< 0.01$); depression – 30% compared to 6.3% in those without MTBI ($p<0.0001$); alcohol misuse – 21.7% compared to 8.6% in those without MTBI ($p=0.03$). Additionally, MTBI at baseline was associated with anger problems* at wave 2 – 76.9% of those with MTBI at baseline reported high levels of anger problems compared to 48.8% of those without MTBI ($p<0.01$). MTBI at baseline was not significantly associated with new-onset PTSD, depression, suicidal ideation, drunk driving or driving without seatbelts at time 2.

Implications: These preliminary findings provide evidence that MTBI is associated with psychiatric morbidity one year later, and can have substantial implications for both screening, and treatment, in military populations. Additionally MTBI is associated with anger problems, which may negatively impact interpersonal relationships and social functioning.

Use Of Mental Health Services. We are also focusing on the use of mental health services across the branches of the Reserve forces interviewed for the longitudinal sample. Mental health service use was reported by 10.7% of the total population and of those, 52.1% utilized VA or DoD care. Among those with mental health service need* (15.7% overall), 34.3% received care, and 77.5% of those reported receiving care that met their needs. Among those with current year PTSD, 58.3% reported receiving care, and among those with current year depression, 45.3% reported receiving care. Only 22.5% of individuals with alcohol misuse received care, and notably those with alcohol misuse comprised approximately half of individuals with a mental health service need. Among those with a dual diagnosis of alcohol misuse and either PTSD or depression, 62.5% received care. Among those with 1 mental health disorder 30% received care, among those with 2 mental health disorders 64.7% received care, and among those with 3 mental health disorders 50% received care. Among those with past year suicidal ideation, 68% received mental health care.

Implications: These findings provide evidence that a substantial proportion of individuals in need of mental health care do not receive services, and suggests that access needs to be greatly improved. This has tremendous implications for a number of ongoing projects, including two ongoing Institute of Medicine consensus panels that are considering care for PTSD in the military.

**MEASURES*

MTBI was measured as having a head injury and ≥ 1 symptom on the Military Acute Concussion Evaluation (MACE). Depression was measured as having at least 2 symptoms on the Patient Health Questionnaire (PHQ-9) and experienced for more than 1/2 the days in a two week period (DSM-IV Criterion A). PTSD was defined according to a modified PTSD checklist (PCL) using all DSM-IV criteria (A-F). Alcohol misuse disorders - abuse or dependence were defined according to the Mini International Psychiatric Interview, using DSM-IV criteria. Mental health need was defined as having PTSD, depression or an alcohol misuse disorder. Dual Diagnosis was defined as having a comorbid pattern of either PTSD or depression and an alcohol misuse disorder. Anger problems were measured using symptoms of the Dimensions of Anger Reactions (DAR) scale, and high compared with low levels of anger were determined with a median split of summary scores.

KEY RESEARCH ACCOMPLISHMENTS

- Baseline survey piloted and implemented
- 1000 Reservists enrolled and interviewed
- Follow-up survey piloted and implemented
- Manuscripts are being finalized
- First follow-up surveys are currently being completed and the second follow-up survey will be piloted in Nov 2011 (please see appendix 2)

REPORTABLE OUTCOMES

None at this time.

CONCLUSIONS

We completed the baseline data collection of the study in July 2010. This entailed completing and piloting the survey and enrolling and interviewing 1000 Reserve members. Preliminary data analysis has begun and manuscript preparation is being completed.

We are finalizing the first follow-up survey.

We are preparing the second follow-up survey and will pilot the survey to 30 participants in the fall of 2011 and begin implementation of follow-up surveys in January 2012. In addition, we have obtained an Extension Without Funds (EWOF), which will allow us to continue our project until the end of 2012.

REFERENCES

None at this time

APPENDICES

1. QUESTIONNAIRE WAVE 1
2. QUESTIONNAIRE WAVE 2
3. QUESTIONNAIRE WAVE 3